

**Guy Norman  
Chair**  
Washington

**KC Golden**  
Washington

**Jim Yost**  
Idaho

**Jeffery C. Allen**  
Idaho



## Northwest **Power** and **Conservation** Council

**Doug Grob**  
**Vice Chair**  
Montana

**Mike Milburn**  
Montana

**Ginny Burdick**  
Oregon

**Louie Pitt, Jr.**  
Oregon

August 9, 2022

### **MEMORANDUM**

**TO: Council Members**

**FROM: Kevin Smit, Senior Energy Efficiency Analyst**

**SUBJECT: Federal Appliance and Equipment Energy Efficiency Standards**

### **BACKGROUND:**

**Presenter:** Kevin Smit

**Summary:** Staff will provide an update regarding the Federal appliance and equipment energy efficiency (EE) standards program. The program, administered by the U.S. Department of Energy (DOE), sets minimum energy conservation standards (and test procedures) for more than 60 categories of appliances and equipment. Products covered by standards represent about 90% of home energy use, 60% of commercial building use, and 30% of industrial energy use. Each test procedure and standard are supposed to be reviewed and updated every six years (seven for test procedures). In recent years, the DOE has fallen considerably behind schedule in updating the standards but had pledged to catch up. As a result, there has recently been a significant number of requests for data, review, and comment from DOE. Council staff work closely with the Northwest Energy Efficiency Alliance (NEEA) to review and prioritize these requests and respond where appropriate.

**Relevance:** The Council has supported appliance and equipment efficiency standards since the First Power Plan (1983), and they continue to be an important part of our energy efficiency efforts. The region's power system has benefited significantly from the low-cost efficiency realized through these

standards. Consumers benefit through lower electricity bills. In addition, the Regional Technical Forum (RTF) and Council staff benefits from the data and analyses developed by DOE through the standards process.

More Info: <https://www.energy.gov/eere/buildings/appliance-and-equipment-standards-program>  
<https://appliance-standards.org/>

# Federal Appliance Efficiency Standards

July Council Meeting  
Kevin Smit



1

## Codes and Standards

### Codes = Buildings

- Envelope
- Mechanical Systems
- Service Water Heating
- Power and Lighting



### Standards = Appliances / Equipment



- Consumer Products
- Commercial and Industrial Products
- Lighting Products
- Plumbing Products
- Other



2

## Appliances and Equipment Efficiency Standards Program



- Program is administered by the Department of Energy (DOE)
  - Energy Efficiency and Renewable Energy (EERE)
  - Building Technologies Office (BTO)
- Core components
  - Developing and updating test procedures
  - Establishing national minimum efficiency standards based on those test procedures
  - Enforcing the standards
  - Supporting the FTC's *EnergyGuide* labeling
  - Coordinating with the EPA ENERGY STAR program

3

## Why do we participate?

- Power Act
  - EE a priority
  - Equitable distribution of benefits
  - Cost-effective
- Least cost for all, especially utilities
- Utility program investments can end up as the next standard
- RTF data and efficiency levels often inform federal standard and vice versa (e.g., RTF relies on data from the DOE Technical Support Documents (TSD))
- Account for appliance standards in our load forecast



4

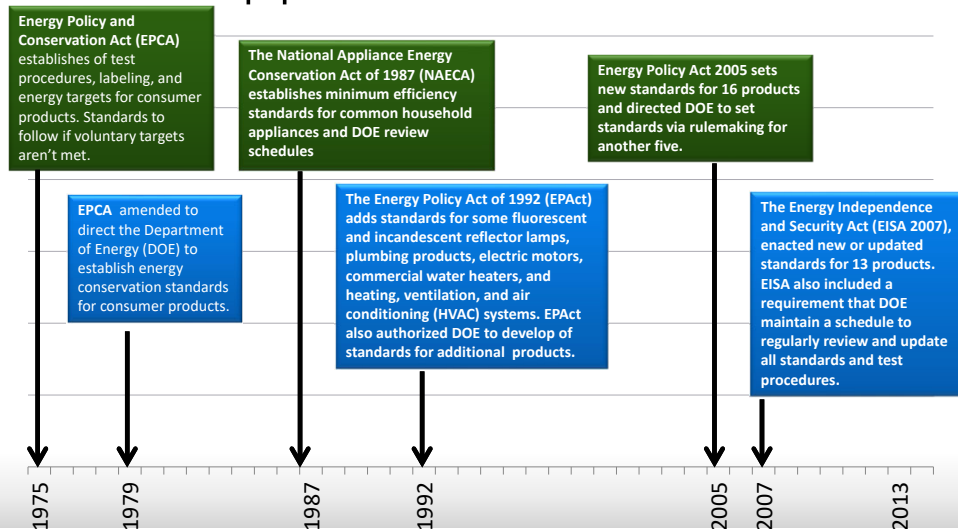
## Two Types of Rulemaking for Each Appliance

- What is a test procedure?
  - Defines the conditions under which the appliance or system must be tested to demonstrate its efficiency level
  - Laboratory testing
- What is a federal appliance efficiency standard?
  - Defines the minimum level of efficiency the appliance or system must meet
  - Maximum level that is 'cost-effective'

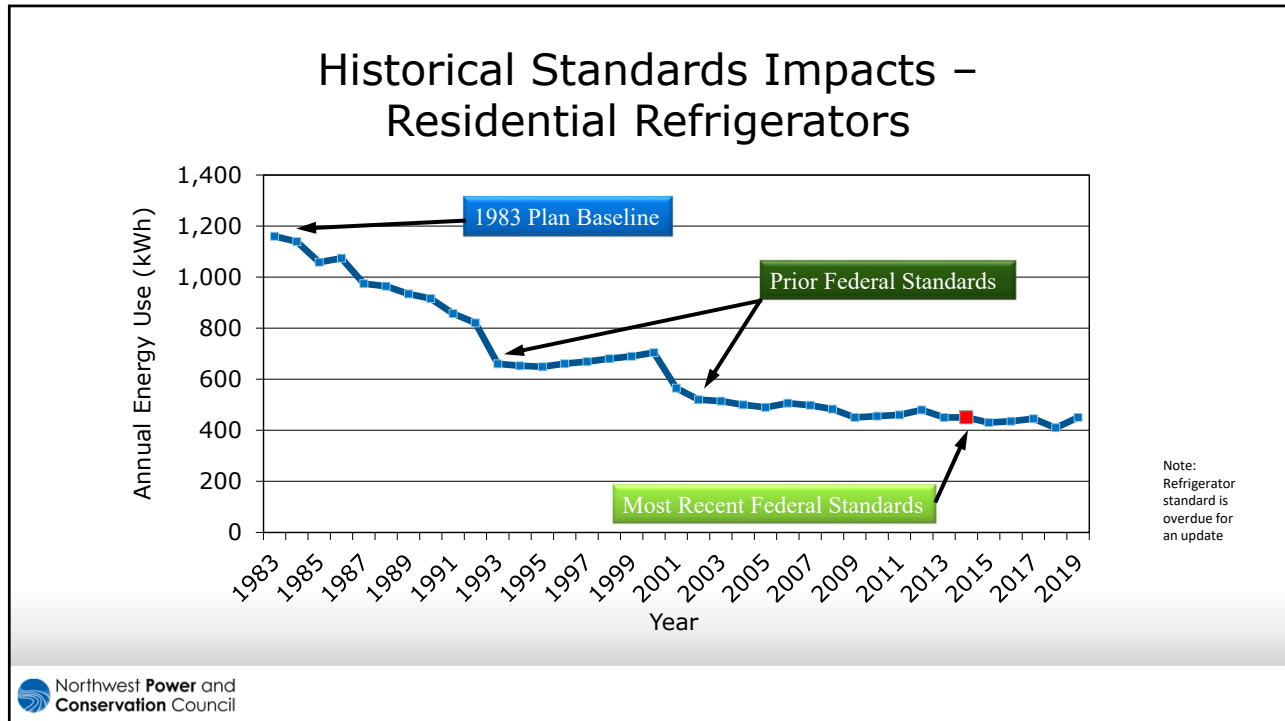


5

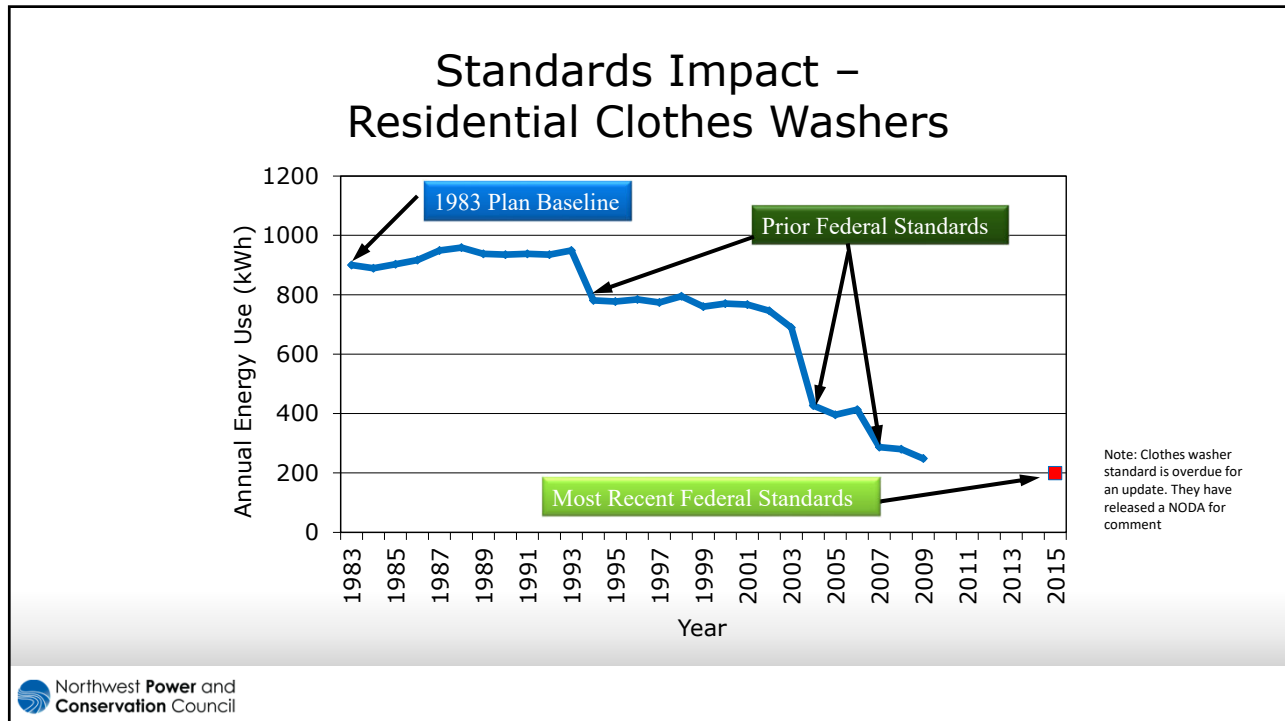
## Legislative History of Federal Appliance Standards



6

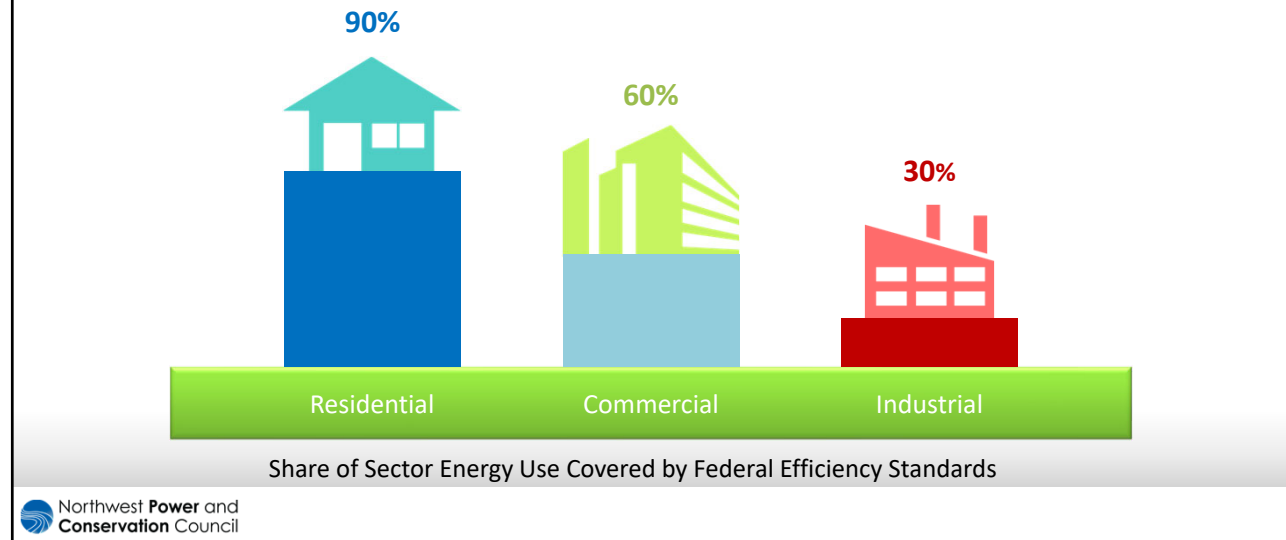


7



8

## Federal Standards Now Cover More Than 60 Categories of Appliances and Equipment



9

## Foundational Legislative Directives for Standards

- **“Cost Effective Max Tech”** - Any new or amended standard shall be designed to achieve the *maximum improvement* in energy efficiency which the Secretary determines is *technologically feasible* and *economically justified*.
- **Anti-back sliding** - Amended standards cannot increase the maximum allowable energy use of a covered product.

Note: the 2021 Power Plan includes a similar anti-backsliding provision for NW state standards

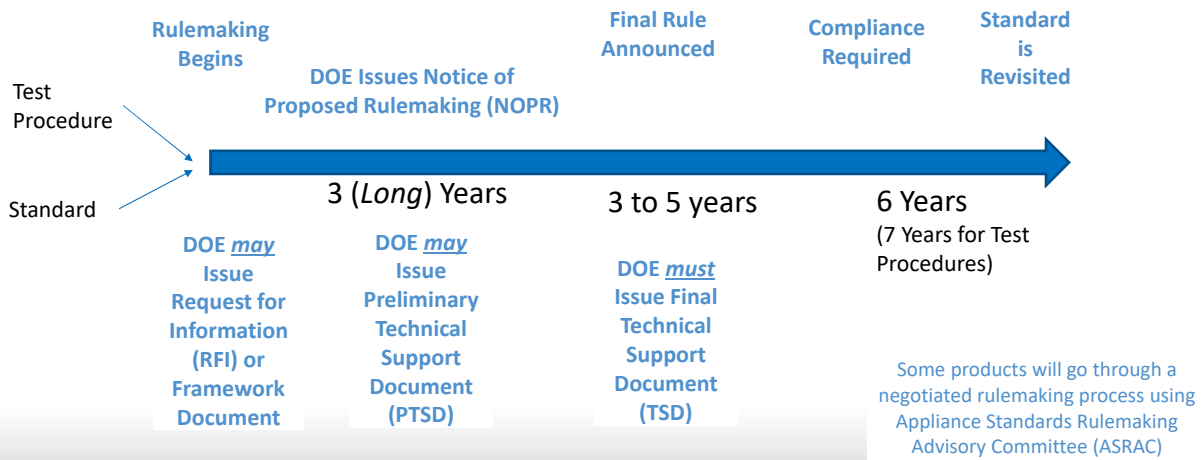
10

## DOE Must Consider Seven Factors When Determining Standards

1. The economic impact on the *manufacturers* and on the *consumers*;
2. The *savings in operating and maintenance costs* throughout the estimated average life of the product *compared to any increase in the price*;
3. The total energy savings from the standard;
4. Any *lessening of the utility or the performance* resulting from the imposition of the standard;
5. The impact of any *lessening of competition*, as determined in writing by the Attorney General, that is likely to result from the imposition of the standard;
6. The need for *national energy conservation*; and
7. Other factors the Secretary considers relevant.

11

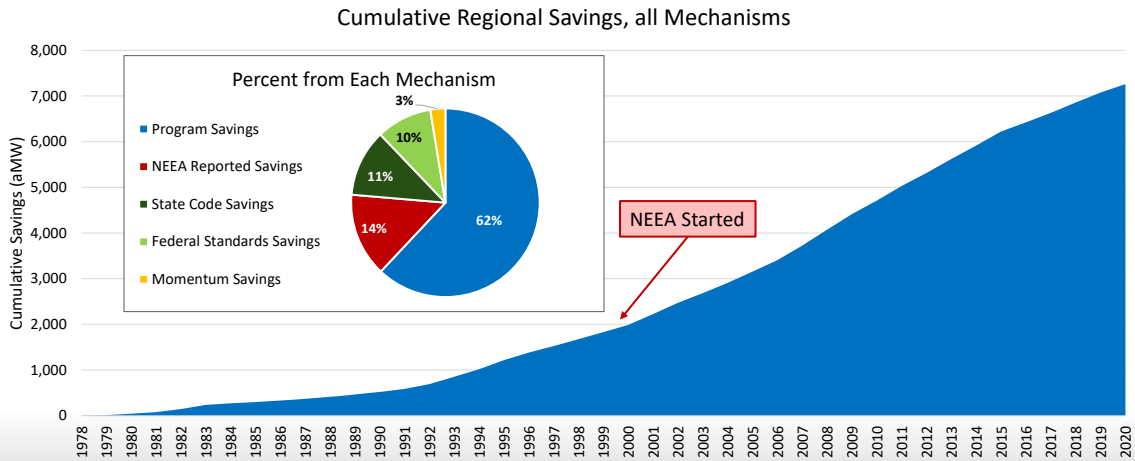
## Standards Revision Process



12



# Regional Savings Includes 21 Percent from Codes and Standards



13

## How are we involved?

- Staff Role (Kevin, Annika, EE Team) – highlight priority items, especially those related to the power plan
- Council comments to DOE (letters)
  - Process rule – back to normal
  - Short cycle dishwashers, clothes washers, dryers
  - Showerheads
  - Light bulb definition and backstop
  - Gas furnaces, water heaters, boilers
    - eliminated separate product classes for condensing units
  - Manufactured housing
- Staff letters
  - Co-sign a few comment letters with NEEA
  - Generally, very technical; mostly test procedures
- Regional/NEEA/RTF support
  - Contribute data, review, expertise
- Participate in national ASRAC\*/ASAP\*\*

### NEEA Codes and Standards Group

- Several full time staff
- Several contractors
- Respond to almost every DOE request
- Provide data and analysis with comments

\*ASRAC – Appliance Standards Rulemaking Committee  
 \*\*ASAP – Appliance Standards Awareness Project

14

## Status of DOE Effort

- There is a large backlog, but it is their goal to catch up
- Over 100 actions so far this year (53 finished)
- Plan to have 48 standard updated by the end of the year
- 38 standards are overdue; lawsuits are pending on 20 of those
- 26 test procedures are overdue

## DOE Progress This Year

- Final Rules
  - Light bulbs
- Proposed Rules
  - Room Air Conditioners
  - Pool heaters
  - Commercial Water Heaters
  - Pool pump motors
  - Furnaces (gas)
  - Four ASHRAE Categories

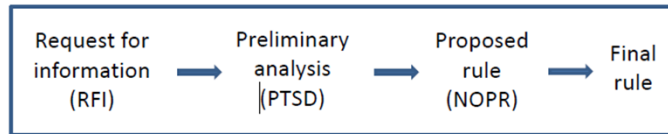


Plus:

- **17** PTSDs
- **5** determinations of no change
- **5** proposed determinations of no change
- **11** test procedure final rules
- **~30** test procedure proposed rules

## Expected by the End of the Year (2022)

- Final Rules
  - Dedicated Outdoor Air Systems
- Proposed Rules
  - Clothes dryers
  - Microwave ovens
  - Single package vertical AC/HP
  - Distribution transformers
  - General service lamps



Plus:

- A few more PTSDs/proposed determinations, final determinations
- **17** test procedure final rules
- **9** test procedure proposed rules

## Summary

- The results of improved federal standards is lower costs to our regional program implementers
- The benefits from these improved standards are more evenly distributed compared with utility programs
- Significant benefits from DOE's data and analyses
- Keeps the Council engaged in EE on a national stage

## Extra Slides

19

## Standards in 2022

Appliance/Equipment	Comment Due date	Rulemaking Stage	Rulemaking Type
Lighting – GSL Backstop	1/27/2022	NOPR	Standard
Commercial Clothes Washers – (no update recommended)	2/18/2022	NOPD	Standard
Dedicated Purpose Pool Pumps	2/23/2022	RFI	Standard
Manufactured Housing	2/28/2022	Draft EIS	Standard
Furnaces (non-weatherized oil-fired, mobile home oil-fired, weatherized oil-fired, weatherized gas, and electric consumer furnaces)	2/28/2022	RFI	Standard
Fans and Blowers (air circulating fans, which include air circulating fan heads, personnel coolers, box fans, and table fans)	3/10/2022	RFI	Standard
Misc. Refrigeration Products (wine coolers, etc.)	3/22/2022	TSD	Standard
Dishwashers	3/25/2022	TSD	Standards
DOAS (Dedicated Outdoor Air Systems)	4/4/2022	NOPR	Standard
Miscellaneous Gas Products	4/8/2022	NOPD	Standard
Ceiling Fans	4/11/2022	TSD	Standard
External Power Supplies	4/26/2022	TSD	Standard
VRF Multi Split Systems	5/2/2022	NOPR	Standard
Electric Motors	5/2/2022	TSD	Standard
Battery Chargers	5/2/2022	TSD	Standard
Computer Room Air Conditioners	5/6/2022	NOPR	Standard
Ceiling Fan Light Kits	5/6/2022	TSD	Standard

These are standards actions for which notices have been made as of 7/5/2022

RED text indicates final stages of rulemaking

20

## Standards in 2022 (cont)

Appliance/Equipment	Comment Due date	Rulemaking Stage	Rulemaking Type
Water Heaters	5/16/2022	TSD	Standard
Clothes Washers	5/27/2022	NODA	Standard
VRF Air-Conditioners & Heat Pumps	5/31/2022	NOPR	Standard
Room Air Conditioners	6/6/2022	NOPR	Standard
Automatic Commercial Ice Makers	6/7/2022	TSD	Standard
Pool Heaters	6/14/2022	NOPR	Standard
Small Electric Motors	6/20/2022	RFI	Standard
Commercial Warm Air Furnaces	6/27/2022	NOPD	Standard
Refrigerated Beverage Vending Machines	6/27/2022	TSD	Standard
Boilers	7/5/2022	TSD	Standard
Miscellaneous Gas Products	7/14/2022	RFI	Standard
Commercial Water Heating Equipment	7/18/2022	NOPR/TSD	Standard
Direct Heating Equipment	7/18/2022	RFI	Standard
General Service Fluorescent Lamps	8/1/2022	NOPD	Standard
Dedicated Purpose Pool Pump Motors	8/22/2022	NOPR	Standard
Dehumidifiers	8/22/2022	TSD	Standard
Packaged Terminal Air Conditioners & Heat Pumps	8/23/2022	NOPD	Standard
Commercial Refrigeration Equipment	8/29/2022	TSD	Standard
Walk-In Coolers and Freezers	8/29/2022	TSD	Standard
Consumer Furnaces	TBD	NOPR	Standard